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133

In all of Turkestan there are only a few places which have in every sense as favorable a situation as does Tashkent. It lies in a broad valley, flanked on both sides by the low thrust of the Chatkal mountains, a valley which is fed from one side by the river Chirchik, from the other by the Keles. The ground on which Tashkent is built, consists, as already mentioned, of a thick loess stratum which continues all the way to the bank of the Syr-Darya, sixty kilometers away. The terrain of Tashkent is undulating and, like all loess landscapes, furrowed through, here and there, by deep cuts, made by the flowing water. As for water resources, upon which all life and success depends in the steppes of Turkestan, no other town in Central Asia can be compared with Tashkent. Ten kilometers away, the well-watered Chirchik, largest of all the tributaries of the Syr-Darya, flows southeast of Tashkent. The town itself lies upon the Salar, a tributary of the Chirchik, which supplies the fields and gardens east of the town and the Russian town with water through its numerous canals. The deeply cut Bos-su canal flows through the native city, which is also a tributary of the Chirchik. (Figure 48, p. 151)

Tashkent is an oasis surrounded by undulating steppe land. The steppe reaches from the bank of the Syr-Darya to the Chatkal mountains, about eighty kilometers east of Tashkent, and its slopes likewise consist, for the most part, of steppe soil. Every year during the spring rain this steppe is covered with relatively luxuriant steppe grass which dries up immediately when the rainy season ends, whereupon the steppe all the way to the mountains /153/ has a frightfully monotonous, pale appearance throughout the summer. West of Tashkent is an extensive marshy landscape, to which the town is probably indebted for a fair share of its fevers. From the Syr-Darya to the mountains the steppe is covered with a number of villages, which are scattered like oases very far apart along the rivers and in the mountain valleys.

Looking out from Tashkent there is a lovely view of the whole spreading steppe country to the northeast, east and southeast between the town and the mountains, and of the Chatkal mountains themselves, which are covered with snow the greater part of the year. Only during the hottest summer months does the snow disappear from the highest peaks. Because of the extraordinary purity of the air the mountains appear to be much closer than they really are. Only during the dry summer months, when no rain has fallen for a long time, does the view become somewhat overcast by the fine

1: von Schwarz--Sa N-5 (ca 1895) 1900 RL1 Turkestan RL1
Tashkent

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[151]

Fig. 41. Loess landscape near Tashkent. Bridge over the Chirchik river between Tashkent and Chimgan. (After a photograph by G. Merzbacher.)

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133 dust in constant suspension in the air. When the air is particularly pure one can see from Tashkent the Turkestan mountain range, two hundred kilometers away, the continuation of the Alâi mountains, with snow-covered crests, glistening like silver in the sunlight, are a magnificent sight.

[132] Tashkent has a very advantageous position in respect to climate as well. The town is protected in winter from the icy northeast winds by the high mountains in the northeast, so that Tashkent has a much warmer temperature during the coldest part of the year than locations farther west in the open steppe. Furthermore, since the valley of the Chirchik opens to the southwest, the amount of precipitation is relatively great, and Tashkent always has, for this reason, even during the worst droughts, a more than adequate water supply, an advantage of which hardly any other town in Turkestan can boast.

2. A Description of Sart Tashkent

361 ### 1. The Grounds and Fortifications of the Town

The Tashkent of today falls into two sharply separated and fundamentally different parts: the native town, so-called Sart Tashkent, and the Russian town, founded only after the Russian occupation. The later lies between the Bos-su canal and the Salar; Sart Tashkent extends primarily west of the Bos-su canal and has today, on the whole, the same dimensions and the same appearance as it did before the Russian conquest.

All Central Asian towns and even the larger villages divide into three separate parts: the bazaar, the most important part of the town, /154/ the residential quarters, which surround the bazaar, and finally the gardens and fields which surround the town proper from all sides. In Figure 49 this division of Turkestan towns is shown schematically. All the towns more or less approximate the basic type shown in the drawing, and deviate from it only insofar as the respective terrain and water conditions require. In the center of the town is the free bazaar square, in which are held the weekly bazaars or fairs as well as all sorts of public gatherings, executions, and the like. Along the bazaar square the permanent shops are joined together, mostly concentrically, while these again are surrounded by the residential quarters, consisting of simple clay huts. /Figure 49 p. 9a/ The sections we have mentioned so far, which together form the real town, are surrounded by an unbroken

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-11-(A)

133
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60°
66°
72°
78°
Ural Mts.
Northern Steppe
Irtish R.
Tobolsk-Tiumen to Arctic
Ob
Ishim R.
Tiumen to R.
Turgay Gap
Turgay R.
BETPAK DALA
(Hungry Steppe)
ARAL SEA
160'
Chu R.
Kara Tau
Telatinsk
Sir Darya (Jaxartes) or Sairdin
Tenl Darya (old bed)
KIZIL KUM
Mirza Chöl
Amu Darya (Oxus) or Jaihun
Zaraf shan R.
Kaska Darya
Murghab R.
Tejen R.
PAMIRS
AFGHANISTAN
60°
66° East of Greenwich
72°

133 ●
102

78°
84°
90°
52°
44°
36°
Ob R.
Irtysh R.
Ural Mts.
Chingiz Tau
Jungarian Gate
LAKE BALKHASH
YEDISU
Tien Shan
Tarim Basin
Kunlun Mts.
KASHMIR
SOVIET
CENTRAL ASIA
Physical
Miles
0 100 200 300 400
International boundary
Mountains, over 2000 metres
Mountains, 500 to 2000 metres
Sea level to 100 metres
Below sea level
78°
84°

22(c)

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I

INTRODUCTORY

ALMOST in the centre of Asia, and far removed from the oceans, are two great natural basins of continental land, known until quite recent times as Russian and Chinese Turkistan. Much of the perimeter of both these territories is ringed round by some of the highest mountains in the world, and where the mountains stop the plains fade into desert or inland sea; both are traversed by rivers which do not reach the ocean; both are inhabited in the main by peoples in whom a Turkish strain (though overlaying and overlaid by others) may still be said to predominate. To distinguish these Transcaspian peoples from the Turks of Turkey and the Caucasus it is convenient to speak of them as the Eastern or Central Asian Turks.

The two parts of this Turkistan are divided from one another by the great mountain transept culminating on the Pamirs, from which spring all the biggest ranges of the world. In a general way this water-parting, linking the Tienshan with the Hindu Kush and Karakoram, is also the political frontier between Russian Turkistan and the Chinese Turki dominion now known as Sinkiang.

Of Sinkiang much is known and much has been written. In earlier centuries there was a parallel movement in the history of the Central Asian Turks in the oasis civilizations both west and east of the Pamirs. Certain dynasties held sway on both sides of the mountains, while, farther north, the Ili gap supplied a route for migration, conquest and trade. More recently Sinkiang opened its gates more widely to the West. For the half-century before 1947 the government in India maintained a consulate in Kashghar on behalf of the British government, and until the other day there were British

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101 substitute, Türkili, the Turkish homeland.

In a sense this new habit is a return to the geographical thought which obtained in the early XVIth century, when Babur left his home in the vale of Farghana to become by conquest the ruler of Kabul and later the first Mughul Emperor of Hindustan. In the whole of his Memoirs Babur speaks [1] of Turkistan only three times and that in the connotation of the town of Yese. To him the territories now collectively known as Russian Central Asia were centred on Maveraunnehr, an Arabic term meaning the land beyond the river. This is the *duab* or mesopotamia bounded by the rivers called by the Greeks Oxus and Jaxartes, known to Arab geographers as the Jaihun and Saihun, and to Persians as the Amu and the Sir Darya. European writers conveniently translate Maveraunnahr as Transoxiana.[2]

The lands south of the Amu Darya up to the Hindu Kush Babur knew as Balkh or (farther east) as Badakhshan, while those north of the Sir Darya were roughly divided into Chach or Shash (the country round Tashkent) and Mughulistan (the Ili valley and Jungaria). Northern Persia and the western Afghan plateau then, as now, were known as Khorasan, the eastern Afghan country was called after its chief towns Kabul, Ghazni and Kandahar. The upper valley of the Sir Darya (known to Babur as the Saihun) then, as now, was called Farghana, while the lower stretches of both the great rivers, then possibly connected in one network of waterways, made up the famous delta country of Khorezm, with its capital at Urgench. These old names are woven into the history and aptitudes of the land and its peoples; without them there can be no understanding of the reactions which followed the Tsarist conquest or of the later development under the pressures of the Soviet system.

133 Just as Tigris and Euphrates give life and meaning to the riverain basin of Irak, so do the Amu Darya and the Sir Darya to the much greater Turanian basin. There are other

[1] Bib. I, 12 and 61.

[2] Scholars seem unable to decide between Transoxiana and Transoxania. Barthold and G. Kirk use the former, Arnold Toynbee and M. Czaplicka the latter, Schuyler and Mrs. Beveridge both!

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analogies. Like Irak, Turan is ringed round with great mountains on much of its circumference, and away from the rivers the flat lands tail off into inhospitable desert — the Karakum or Black Sands between the Amu and the Caspian, the Kizilkum or Red Sands in the *duab* between the rivers and the Aral sea, and, north of the Sir, the half-desert steppe known as the Betpak[1] Dala, or Plain of Misfortune.

This is a land buttressed by immense mountains. The cathedral nave of the Tienshan, with its southern aisles the Alai and Transalai, is a system of high alpine structures, running parallel in a general direction from east to west. It is joined with the Hindu Kush and Karakoram by the Sarikol transept, which runs tranversely north and south. West of the Sarikol is the well-known upland of the Pamirs. There are peaks in the north around Khan Tenri, and southward in the Pamir-Sarikol region, some 24,000 feet in height.[2] These ranges are on a scale only surpassed by the Himalaya and Karakoram, and they contain some of the biggest glaciers in the world outside the Arctic circle. They form the watershed between Western and Eastern Turkistan, the Russian and the Chinese dominions. Both the great rivers watering Russian Central Asia rise west of that watershed, the Sir Darya in various gorges of the Alai south of the lake Issik Köl, and the Amu Darya in Karategin and the Pamirs.

The upper waters of the Amu proper are known to the Tajiks of that region as the Ab-i-Panja or Pianj. It is joined from the north by four large tributaries, the Aksu, the Vakhsh (Turkic Oghush) running out of Karategin, the Kafirnihan and the Surkhan. The Sir Darya is made up of three main streams, the muddy and turbulent Narin from south of Issik Köl, the clear Karasu with its affluents the Tar and Kara Kulja from the east, and the Sukh from the south, all joining in the Vale of Farghana.

[1] A corruption of the Persian word *badbakht*.

[2] Khan Tenri, just under 24,000 ft., is right on the frontier of Chinese and of Russian Turkistan. The Russians claim to have discovered another peak close to it, and within their territory, of greater height. Two peaks in the Pamir region, now named after Lenin and Stalin, are of some 24,000 ft.

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● 133 Turkistan is also a land of vast stretching plains and deserts, with a very gentle decline from the mountain-skirts to the Aral and the Caspian Seas. The fall from the point where the two great rivers issue from the mountains, the Amu near Kelif and the Sir at Begovat, a new town just west of Khojent,[1] is not more than a few hundred feet in many hundreds of miles. The flatness of the plain causes the lower courses of the rivers to be much beset by reedy marshes, which split up their channels and render them difficult for navigation. Towards the Caspian the Turanian basin sinks to nearly 100 feet below sea-level. The Sarikamish depression between the two seas is another earth-hole deeper than the Caspian, and there is a point on the Mangishlak Peninsula on the north-eastern shore of the Caspian over 400 feet below the sea.

The southern mountain-rim of this great basin is formed by the Kopet Dagh barrier, a westward continuation to the Caspian of those Paropamisus outliers of the Hindu Kush which form a shield in front of the Afghan city of Herat. The Kopet Dagh is the traditional limit between Iran and Turan, and its crest still roughly defines the frontier between the USSR and Persia. Its highest point is not much more than 8000 feet and in itself, seen from the plain, it is a range of barren spires, reminiscent of a lunar landscape. But to one who approaches the Turanian basin from the Iranian plateau this escarpment offers a prospect wonderful and revealing. The edge of the plateau is like the shore of a land facing a limitless sea. The mountains form the rim of a vast bowl, a rim on which the traveller stands gazing over undulations of sand to a horizon without more feature than the ocean. His eye wanders farther, until in imagination he can discern across the Black Sands the low cliffs of the Ust Yurt plateau, lying between Caspian and Aral, and one of the most desolate regions on earth. In one or two favoured spots a stream descends from the plateau to form a string of green oases

[1] The Soviets have renamed the ancient city of Khojent as Leninabad. It is amusing to think how Babur, who wrote of Khojent and its virtues about the year 1500, would have smiled at the idea of this new prophet and his name.

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across a plain which finally engulfs it. But at most places, as 133 ●
the caravan reaches the top, men and animals find themselves on the extreme edge of one world, looking into the void of another. This rim was always the natural dividing-line between two geographical regions and two climates: from time to time, it has been a boundary between two ways of life. Across it certainly in history Arab, Turk, Mongol and Persian have carried their several ways of life in pursuit of conquest and trade, and there has been wide action and reaction on both sides of the line. Indeed the Persian poet Firdausi, writing at the end of the Xth century, was able to claim the Amu Darya rather than the mountain-rim as the limit between the two lands and civilizations that he was the first to name Iran and Turan,[1] and since then the tides of conquest and assimilation have ebbed and flowed many times over these mountains. Even so, it is like a cliff, opening on the land-ocean of the desert, and it remains the geographical symbol of a barrier far older than the frontier defences set up by the Soviet Empire.

The two great rivers are not the only waterways of the Turanian basin. At the point on the Afghan frontier where the Kopet Dagh joins the outliers of the Hindu Kush, the Tejen (the Hari Rud of Khorasan) and the Murghab spill out to the desert to irrigate the lands around Merv and to be lost in the sand. In Transoxiana, between the two great rivers are two streams as famous as they — the Kashka Darya, on the banks of which Tamerlane (Timur)[2] was born, and the even better known Kohik or Zarafshan, the Gold-Scatterer which waters the rich lands of Samarkand and Bukhara. The name Zarafshan is by some attributed to the richness of the cultivation; others point to the gold-washings to be had from the river's sand. One of the river's sources is a large glacier, another the Iskandar Köl Lake, nearly 7000 feet above the sea, and there is a legend that the lake was formed by Alexander, who set across the valley a golden dam to form a reservoir and regulate the

[1] This distinction appears in the Avesta, but Firdausi gave it popular expression for the first time.

[2] Tamerlane = Timur Lang = Timur the lame = (in Turkish) Aksak-Temür.

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river's flow. Both Kashka and Zarafshan sink into the sand before reaching the Amu Darya. North of the Sir Darya and the Kara Tav prolongation of the Tienshan comes the real steppe, much of it half-desert and known as the Betpak Dala (Plain of Misfortune) but part of it watered by yet other rivers, the Talash and the Chu. The Chu possibly at one time drained Lake Issik Köl, but now it passes some miles from it and down the Bum gorge into the plain. Like the Zarafshan, both these northern rivers sink into the sand.

Up to this point, going northward and eastward, the watershed has been broadly coincident with the frontier between China and the Russian Empire, and the basins of the two great rivers lie wholly in Russian territory. But to the north-east of the Betpak Dala lies Lake Balkhash with Yedisu (in Russian, Semirechye, the Land of the Seven Rivers) to the east of it. The main affluent to this basin is the River Ili, flowing past Kulja out of Sinkiang. Occupied by the Tsar's forces in 1876 during Yakub Beg's period of rule in Kashgharia, Kulja was surrendered to the Manchu Empire on the resumption of Chinese control a few years later, and since then has been beyond the formal frontier of Russia.[1] As things are, this part of the Russian frontier has no mountain-screen. It lies open not only to an approach down the Ili Valley, but through the gaps in the lower hills which connect the Tienshan with the Altai farther north. These are the passages leading to Jungaria, along which the tides of conquest, and later the trade-routes, moved westward and eastward under Chingiz and Timur. They are known as the gap of Chuguchak, the Jungarian Gate and the Iron Gate (or Talki Pass), and the Ili River Valley itself. Together they offer an easier entrance than the passes farther south from Kashghar into Farghana by Irkishtam, the most practicable of which, the Terek Davan, rises to 13,000 feet.

It is in the mountains above the Ili Valley that we find

[1] For the reality as between Russian and Chinese control on this frontier, even in the period between the Great Wars, see Fitzroy Maclean, *op. cit.* Since then the advent to power of the Mao régime in China, for the time at least, has further deprived this frontier of its meaning.

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It is in the mountains above the Fergana valley that we find 173

the legendary springboard of the Turkish races. 'God has chosen the Turks as his own army, and settled them in the highest parts of the earth with the best air, that he may send them at his chosen time against any nation in the world.'[1] These are the words of Mahmud Kashghari, a native of the Issik Köl country, writing in Baghdad in the XIth century. They suggest not only the early movements of the Turkish clans, issuing from the highlands of the great mountain systems of the Tienshan and the Altai, but the disasters of the more terrible Mongol flood which was to succeed the Turks. The Turkic name for the Tienshan is the Tenri Taghi,[2] with its central peak the Khan Tenri, marking the boundary with Chinese Turkistan. This was the land sanctified by the epics, the Askar mountain beyond Issik Köl and the pastures of Yulduz, used by Timur as a summer retreat between campaigns. Here he summoned the clans to celebrate his victories. Even today the Osmanlis sing, 'I mounted my horse and rode to Askar, the most beautiful, for I loved it, the shining one'.[3] The Khans from the east and the Khans from the west would gather in summer on these highlands, the central position from which government and conquest, east and west, were planned. For these reasons the epics spoke reverently of the high mountains, giving them names after Afrasiab or Kök Türk, or the divine attributes of a Turkish Olympus, Khan Tenri or Muztagh Ata. The idea of a nation riding out of the dawn, and moving in cavalcade towards the sunset, is familiar in Turkish poetry and legend. Later, when the conquering hordes had gone by, these passages became the main caravan routes for trade; the Silk Road of Marco Polo went this way, passing across Turkistan. In a sense Turkish Central Asia, then on the highway of commerce, had become the centre of the world. It was soon to decline.

West of Balkhash, and as far as Aral, lie hundreds of miles 133
of open steppe, stretching down from the Siberian flatlands

[1] Cf. Togan, *op. cit.* p. 13.

[2] Tenri – Tanri – God. Tagh (alternative Tav) – dagh – mountain.

[3] *Atima bindim de gittim Askara çok güzel sevdim de aydin askara.* Cf. Togan, *op. cit.* p. 7.

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133 in the north, and becoming more and more barren with the southern latitude until it merges with the Betpak Dala. But, as the caravan goes north, the traveller reaches first the low hills of the Ulu Tav and Orta Tav, excellent seasonal pasturage when the snows melt, and the favourite summer resort of the Kipchak clans, from whom many of the true Uzbeks, Kazaks and Bashkurds trace descent. As he goes north, the pastures in spring become greener and are starred with flowers, the north of Kazakistan being in the temperate zone, and enjoying a precipitation sufficient to support agriculture and tree-growth. Almost all the well-known specie tulips of our gardens have their home on these steppe-lands. The best recent description in English of this land comes from the American pen of Littlepage:[1]

> We pushed along day after day through some of the finest pasture land I have ever seen, all well-watered, with rivers and lakes enough to support herds which probably could feed the whole of Europe . . . plateaus brilliant with green grass and sprinkled with multicolored wild flowers. The weather was warm and the skies cloudless and the only drawback the clouds of mosquitoes which gave us little peace.

There is a geographical feature of this steppe which at some future time may be of great account. Round about latitude 51 degrees there is an imperceptible west to east watershed, north of which all the waters flow towards the Arctic Ocean. From west to east the rivers are Tobol, Ishim and Irtish, all headwaters of the great Arctic river Ob. There are those who think in terms of a possible diversion of water running to waste in the Arctic Ocean to fertilize the arid deserts of Turkistan.

133 311 Another fact of geography looming large in the thought of all who write of Turkistan is the broad Vale of Farghana or Kokand, the heart of the scanty oasis country of Transoxiana. Schuyler[2] in 1876 described in vivid language the contrast between the desert and the sown, saying that even in Zarafshan

[1] Bib. I, 62, p. 185. [2] *Op. cit.* i, 284.

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and Farghana, the most fertile regions, it was possible then to ride long distances without so much as seeing a blade of verdure, so small was the extent of country irrigated by the rivers. Since then much has been achieved, but even now it would be instructive and curious to see a map of these regions on which the arable lands were carefully marked, so narrow would be the strips along the rivers and at the foot of the mountains. In Farghana the irrigated areas, and even the *lalmi* [1] lands dependent on rainfall, cover broader acres than elsewhere in Turkistan. Its predominance as the agricultural, and now one of the industrial, centres of this country has a certain inevitability. The surrounding mountains with their fertilizing streams give it a climate relatively mild in summer and winter, and an alluvial soil on the deposits which fan out from the river mouths. In these oases intensive cultivation by a large population has always been possible — the cluster of townships is apparent from any map. The lie of the land has favoured the construction of many ancient irrigation channels, now supplemented by great modern works. Climate, latitude and water provide exactly the right environment for the cultivation of cotton and of the mulberry-trees on which the silk-worm thrives. The rapid transition from high mountain valley to open plain offers many natural sites for the harnessing of water-power for the production of electricity. The more recent discovery of oil and coal and quantities of valuable non-ferrous and other mineral resources in and around the valley, combined with the Soviet policy of moving textile factories to the site of production of raw material, has given it a new industrial significance not lost upon any who contemplate this land. Kokand, its old capital, and the hills around the valley were the main focus of the Basmachi movement of 1918–24 for the independence of Turkistan.

In its way the natural beauty of the oasis country is greater and certainly more intense than that of the steppe

[1] It is interesting to note that the Eastern Turks use here the same word as the Pathans of Peshawar for unirrigated cropped land. They also use *kashar*, a helping party of friends at harvest-time, and *baranta*, a raid and seizure of an enemy's flocks to indemnify oneself for a wrong; both words in common use in Pashtu.

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climes. Because of the distance from the sea, precipitation even on the mountains around the Tarim basin is low, and there is ground for the belief that the glaciers are still shrinking, with a resultant steady diminution of the fertilizing water. In other words, the recession of the ice-age is to this extent and in this area linked with history.[1] A process which is working in Sinkiang has its application also to the very similar conditions of soil and climate obtaining in Russian Central Asia.

Another change, in this case historical, is that in the courses of the two great rivers Amu Darya and Sir Darya, and possibly even of other waters which empty into the Turanian basin. The records state that more than once in historical times the Oxus[2] (Amu Darya) at least has changed its course as between the Caspian and the Aral Sea. This is an aspect of physical geography at which all who write of Transoxiana glance again and again, with never-failing fascination. The idea runs like a thread through the literature of the region. The general thesis has the support of the Russian historian Barthold, who explains the decline of Khorezm by the shifting of the rivers' course in the XVIth century. He and others write as if they saw the Oxus with the eyes of Matthew Arnold — the great river moving mysteriously across the plain, seeming now to be lost and broken up in little channels 'a foiled circuitous wanderer', yet in the end flowing inevitably forward to release in the Aral Sea — a symbol of the history of the land.

According to Togan,[3] at the time of the Arab conquest the main waters of the Amu Darya (Oxus) flowed not to the Aral but to the now dry Özboy bed, after filling up the Sarikamish depression in the north of the Karakum desert and just below the Ust Yurt escarpment. At that time only one arm reached the Aral Sea, which was a great reed-swamp much smaller than

[1] Bib. I, 87, Sir C. Skrine.

[2] The name Oxus can be variously derived from Ak-su, the White Water, a tributary; or from Oghush (Arabic Vakhsh), the main tributary from the Terskey Alai and Karategin. In its upper course the Oghush is called the Surkhab or Kizilsu — Persian and Turkish for Red River — by the Tajiks and Turks respectively who live on its banks.

[3] *Op. cit.* pp. 108 *et seqq.*

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133 it is at present. After the Arab conquest, the Amu Darya changed its course to carry all its water as at present into the Aral Sea, where previously only one arm had debouched. The Özboy Channel dried up, and the waters that had once filled Sarikamish were diverted into the Aral. But in 1221, when the Mongols captured Urgench, then capital of Khorezm, the Amu Darya had reverted to its old course, and once more flowed to the Caspian by the Özboy as its main branch, thus opening up a very important channel of trade from east to west. The Sir Darya (Jaxartes), or more probably a large arm of it, flowed through the now dried up Yeni Darya, which began above Ak Mechit (Kizil Orda) and, moving to the south-west past the Aral Sea, debouched into the Amu Darya to swell its waters on their way through the Özboy to the Caspian. Muslim authority is quoted to establish that it was only in exceptional years of flood that the combined Oxus and Jaxartes — a sort of 'Shatt-al-Turk' — reached the Caspian, flowing through the Balkhan gap to the gulf by what is now Krasnovodsk. The river usually sank into the Karakum at a point known to Arab geographers as Kalat-us-sin (in Mongol times Rebat Tamgach) near the present Kurtish and over 100 miles east of the Balkhan hills. At this point there is a fault in the desert, with a declivity a few feet high, over which the combined river flowed whenever its volume sufficed to take it on to reach the Caspian.

133 This continued until 1573, when the Amu Darya and
175 the Sir Darya settled into their present courses to the Aral Sea, and trade on the Özboy and Yeni Darya came to an end. The alteration in the course of the rivers Togan counts as the great catastrophe of the XVIth century affecting Turkistan.

He continues:

Before 1573 goods could be shipped direct by boat from Azerbaijan and from the Volga by the Özboy to the waterfalls near Rebat Tamgach, and trans-shipped thence to Urgench. As long as the route by Urgench on the Özboy and Yeni Darya remained open, the towns on the rivers Talash, Chu and Ili grew immensely

2 alternate changes in river beds -- See pp 23-24 ct 116 - Ana

2: Caroe S-4 (no date) 1953 RL1 Soviet Central Asia RL1

in importance. Chinese authorities of the VIIth–IXth centuries, and Arab geographers of the Xth century, give us the names of many towns and settlements in the Talash and Chu country. The scholar Jemal-ul-Karshi tells us the names of many scholars of his own time who lived in the towns on the lower Sir Darya, and reports on their service to science. Among the MSS. in the libraries of Istanbul there are many religious and literary works of this Mongol period — unfortunately not so far examined. If the Amu Darya were to flow once more into the Caspian, and the lower parts of the Chu, which now sink into the sands, could be made useful for sowing, then in some future Turkistan there might be a revival of the lower Sir Darya, the Özboy, the lower Talash and Chu, and Urgench, Akmechit and Tokmak become once more administrative and cultural centres.

At first sight it is not apparent how a diversion in the lower course of the Amu Darya could affect the prosperity of the upper piedmontane tracts watered by the Ili, Chu and Talash rivers. But separate passages [1] indicate that the writer is seeing a vision of some kind of triple canal project as worked out in the Panjab. He has in view the weaving together of a network of rivers and link canals, leading the Chu and Lake Balkhash through the Betpak Dala to reinforce the Sir Darya, the Sir Darya into the Amu Darya, and the combined rivers into the Caspian Sea.

It is clear from Schuyler [2] that the early Russian engineers were of the same mind. According to him, the theory was based originally on surveys made by an early Tsarist officer, Colonel Tchaikovsky. Schuyler makes two observations, first that the Özboy is in line with the Yeni Darya, and secondly that there is indubitable evidence to the level of Issik Köl having once been several hundred feet higher than it was when he visited the country. It could then have acted as a reservoir at the source of the Chu River. This evidence was held to support a proposition that the volume of water in the Chu might have been so increased as to discharge into the Sir Darya, and thence in line into the Yeni Darya, so forcing the Amu into the Özboy bed and towards the Caspian

[1] *Op. cit.* pp. 21 and 580 *et seqq.*

[2] *Op. cit.* i, 50 *et seqq.*

2: Caroe S-4 (no date) 1953 RL1 Soviet Central Asia RL1

Sea. The subsequent depression of Issik Köl greatly reduced the volume of the Chu, with the result that the rapid current in the Sir Darya, no longer turned by a river coming from the east, impinged upon the opposite bank, creating swamps and finally struggling through them along the level steppe until it emptied as at present into the northern end of the Aral Sea. In the same way the Amu Darya, forming marshes about the places where it formerly turned into the Özboy, found a new outlet at the southern end of the Aral Sea.

Togan's idea is that, by another change to be engineered by man, the economic future of his Türkili could be assured. We shall see that Soviet engineers have put forward a great engineering project for diverting the Amu Darya to the Caspian to irrigate the Karakum, and the natural deduction from this would be that they believe water did once reach the Turkmen desert from the river. But the latest Soviet theory seems to be that the Oxus has not changed its course since the Tertiary Period, when it was turned to the Aral by an earth movement along the axis of the Caucasus uplift.[1] In this view, which is at variance with many records, Soviet savants are unlikely to be relying on what others have said. It is more credible, I think, that they are upheld by the dogma that it is left to Soviet man alone to change the face of nature. The Tertiary Period is safe enough; but historical convulsions are a different matter. They cannot be admitted to have occurred if they in any way detract from the inevitable movement of a Five-Year Plan. When it comes to history, it must be Soviet man who is the first to put things straight.

There were, however, reasons for the decline of Turkistan from its position held in the Middle Ages other than changes in the course of the rivers. Although these reasons are historical, they are of a general nature, and since they are connected with the use by man of geographical sea-routes in preference to land-routes as the medium of commerce, it is

[1] Bib. II, 1, Professor J. Bernal.

2: Caroe S-4 (no date) 1953 RL1 Soviet Central Asia RL1

Turning to irrigation, we note that
Sir Darya starts in Kirghizia, passes into Uzbekistan, thence 131
into Tajikistan, thence again into another part of Uzbekistan, 312
and finally runs out into Kazakistan. The Amu Darya too 133
starts in Tajikistan, passes along the short southern side of
Uzbekistan, thence flowing into Turkmenia, pursues a course
close to the Uzbek boundary until it re-enters Uzbekistan in
the Khiva region, only to touch Turkmenia once more at
Takhya Tash opposite Nukus, and finally to flow back into
Uzbekistan again. In both cases the irrigation canals often
have to cross what on the original Soviet showing were
nothing short of national frontiers between independent units
of a federal State, and it is not easy to uphold the claim that
the irrigation systems have been kept within single adminis-
trative units. The difficulty of organizing irrigation across
a real administrative frontier is obvious to anybody who
possesses experience, for there is no administrative question
which leads to so much disagreement and disharmony as the
disposal of competing claims to irrigation waters from the
same canal or from different canals on the same river. Assum-
ing for the sake of argument the official Soviet theory that
these republics are real sovereign autonomous units in a
federal structure, it would be impossible for them, situated as
they are up and down the same rivers, to reach the necessary
agreements for the season-to-season, week-to-week, and even
day-to-day distribution of water, without which an irrigation
system does not work. The conclusion is irresistible that one
reason for so drawing these boundaries was to compel a degree
of central direction which makes nonsense of a real autonomy.
Or we may say if we like that it did not matter how the
boundaries were drawn, for the administration of all essential
matters would be in central hands. In either case their only
meaning would be to divide artificially stretches of territory like
the Farghana or Khorezm oases, each of which has a natural
geographical and agricultural unity. The best that can be said
for them is that the convolutions look pretty on the map.

There is another curious feature of political geography in 131
Soviet Central Asia. The five capitals are — of the Kazaks 361

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A cotton transport in the streets of Samarkand. To this day caravan traffic plays an important part in Turkestan.

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pulated countries in the world. It is also known as Chinese Turkestan, and today forms part of the province of Sinkiang. The greater part of the country is a barren wilderness (see ill. page 1435). The central part, called the Takla Makan desert, is not only uninhabitable, but practically impassable. The very small quantities of water which run down into this basin at the time of the melting of the snows form the river Tarim, which runs eastward into the salty lake of Lopnor. The few oases, of which Kashgar, Jarkend, and Khotan are the most important, are all situated on the margin of this territory, along which the roads run. All commerce goes by way of caravans which require months to cover the distance from China to Kashgar.

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1 [Eastern Turkestan -- Analyst]

2 [See cat 116, p. 5 -- Analyst]

133

Ruins of Buddhist temples in Eastern Turkestan. Tapak Mazar in the Oasis of Turfan.

492 to Kashgar. Only Bactrian camels, very heavy
133 double-humped animals, whose thick coat of
hair protects them against the snow-storms
and the bitter cold, are strong enough to carry
burdens of merchandise through this water-
[132] less and treeless country. The temperature
varies between + 35° centigrade in the summer
and — 25° in the winter.†

172 It is probable that conditions were not al-
133 ways so unfavourable. The ruins of richly
487 adorned Buddhist temples and monasteries
excavated by Sir Aurel Stein, Albert von Grün-
wedel, and Albert Le Coq, and an astonish-
ingly large number of frescoes, sculptures, fa-
brics, and documents discovered by these
scholars bear witness to this fact. The so-called
silk-roads which passed these monasteries were

† [In Eastern Turkestan --Analyst]

4:Leix U-5 (no date)1941 RL1 Turkestan RL1

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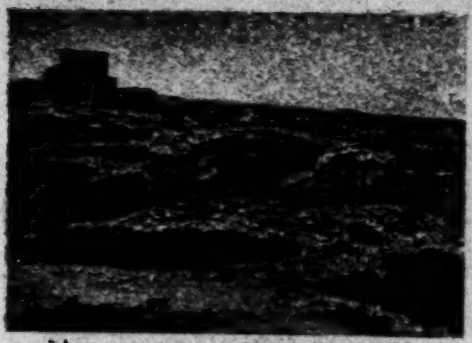
the trade-routes between China and the West. In ancient and medieval times they were numbered among the busiest caravan-routes in the world (see Ciba Review No. 10, page 316). Silks, brocades, precious stones, Chinese porcelain, metal and glass goods of enormous value were transported by these roads. Nevertheless Marco Polo's report shows that even in his day, that is to say towards the end of the thirteenth century, the population must have been very small, and that the water-works were falling into decay. It is very probable that the Mohammedan invasion which destroyed the Buddhist civilization of Eastern Turkestan was not entirely responsible for this decline; a general change of climatic conditions must be presumed to have taken place. In Marco Polo's

4-Leix U-S (no date)1941 Fl.1 Turkestan Fl.1



Anau in Turkmenistan. This was a flourishing town in the 13th century, but is now a ruin, since its water supply was cut off during a war.

133 time the country was so barren that it was firmly believed to be inhabited only by ghosts.

101 131 [631] By comparison with this desert area Western Turkestan is a rich country. It has at all times been of cultural importance, and sometimes of very great importance indeed. At the present day it is divided into the four republics of Uzbegistan, Turkmenistan, Tajikistan, and Kasakistan, which are incorporated into Soviet Russia. The territory stretches northward to the Aral Sea, in the West it is bordered by the Caspian Sea, in the South by Persia and Afghanistan, and to the East, as already stated, it abuts on Sinkiang, the westernmost province of China. Western Turkestan, too, is a land of

132 Western Turkestan, too, is a land of contrasts no less marked than those of Eastern Turkestan. Its climate is continental in the extreme and very dry. During the summer the temperature reaches more than 40° centigrade, and in the winter it falls to 25° below zero and even lower. Nine tenths of Western 133 Turkestan consist of barren desert. The desert of Kara Kum (Black Sand) to the South of the Aral Sea, the home of the wandering Turkoman tribes (see map on page 1434), was named the Grave of the Caravans, and Kizil Kum (Red Sand), the desert situated North of Kara Kum, gives but meagre sustenance to the nomad Kirghiz tribes and their herds.

All the more fertile by contrast are the oases of Western Turkestan. The district is watered by no fewer than six large rivers, among which are the two historically important streams of Amu Darya and Sir Darya, known to the ancients as Oxus and Jaxartes. The valley of the upper Sir Darya is named Ferghana, a fertile area surrounded by mountains, which in the course of history has been coveted and conquered by many peoples, chiefly for the sake of its famous horses. In more recent times it has become known as one of the principal cotton and silk producing countries (see ill. page 1438).

More than once within human recollection the Amu Darya has changed its course; three hundred years ago it sent at least one arm into

† [See cat 114, p 4 -- Analyst]

2 [See cat 114, pp 13, 16 -- Analyst]

4:Leix U-5 (no date)1941 RL1 Turkestan RL1

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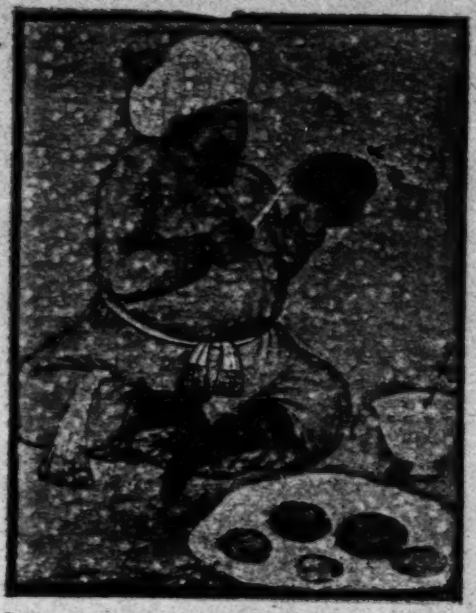

Bokhara ruler of the 16th century cutting a melon. The features show a pronounced Turkic-Mongol cast. Contemporary miniature.

133 the Caspian Sea, and it is possible that at one time the entire river ran into that sea. Therefore, we find in the middle of the Kara Kum desert the ruins of large medieval towns marking the course which the water at one time took. At the present day both the Amu Darya and the Sir Darya run into the Aral Sea.

312 The four other rivers have no outlet, and would disappear in the desert, were it not for the fact that a system of irrigation which has been developed over a period of thousands of years serves to turn their waters to useful account. By means of this system the water is conducted through a net-work of canals which finally become mere ditches (ariks); thus it finds its way all over the country into every field, cotton-plantation, and orchard (see ill. page 1436). The distribution of the water is so well regulated that every peasant in Western Turkestan knows exactly on what day he can water his fields. Among these four rivers there are two particularly important ones, the Serafshan, the waters of which fill the ariks and mosque-ponds of Bokhara and Samarkand, and the Murghab, on which the prosperity of the oasis of Merv depends. In war-time the first thing to be destroyed was invariably the canal-system. The ancient city of Merv, at one

361 At the present time one must think of it as two essentially different towns: the Asiatic and the European. The latter, although it lies directly next to the former on the eastern side, has a completely different appearance. Therefore we will describe Asiatic Tashkent first, and then give a few data about the European town.

361 Both the Asiatic and the European Tash-
312 kent are irrigated by aryks /irrigation canals led from the Chirchik river, which flows 8 versts south of the town. A large aryk which looks like a river flows from the Chirchik 45 versts from Tashkent. /405/ This is the Zakh-Aryk (1) which passes 10 versts north of the town.

1. The entire length of the Zakh-aryk is 85 versts. In the upper part it is 77 feet (eleven sazhen's) wide and 3 feet deep. It flows into the river Keles.

Another aryk, the most important one for the town is the Bos-Su, which is conducted from the Chirchik 31 versts from the town. At the Lyabzak gates it enters Tashkent in two branches and flows through the town under various names. A third aryk is led from the Chirchik around Niaz-bek 25 versts east of Tashkent, and flows directly to the Russian part of town. It then flows into the Gadragan aryk, and after that, branching out into small trenches it irrigates the gardens of Russian Tashkent.

[133] The small river Salar, a branch of the Chirchik, independent of the aryks already mentioned, flows 2 versts south of the town.

8:Kostenko 132-G-4,5 (1868-80)1880 RL1 Turkestan
RL1

The town of Vernyy (Alma Ata)

361 After the Russian occupation of the
132 Trans-Ili region in 1853, the fortress town of Vernoe (Alma Ata) was established in the following year, 1854, with the aim of consolidating the Russian domination of the Great Horde. It was founded on the spot where the town of Almata, which means 'apple', had been, a town known for its trade and as a station on the great road to China in the Middle Ages frequented, among others, by the Genoese merchants.

At first the fortress town of Vernoe was the administrative center for the Alatau okrug, subordinate to the military governor of the Semipalatinsk oblast'. After the establishment of the Turkestan military okrug, however, the fortress was made the capital town of the Semirechie oblast' and began to be called Vernyy. The natives and many Russians call Vernyy "Almata", as it was formerly called.

361 /418/ Vernyy lies on even sandy clay place, just at the foot of the Trans-Ili Alatau mountains, along the small Almatinka river.

133 The Almatinka has its source in an unusually picteresque spot in the mountains, and flows very swiftly, roaring and foaming along its course which is sprinkled with large rocks in many spots. After it emerges from the mountains it retains its swiftness and the special quality of the river bottom even though flowing through level country.

133 The Almatinka is no wider than 7 feet (3 arshins), with a depth of about 9 feet (4 arshins) and it can be forded anywhere. Furthermore the amount of water in the river is decreasing every year.

[312] This decrease of the water of the Almatinka is caused, first of all, by the fact that aryks or canals are led off from it, just after its emergence from the mountains, for the irrigation of the fields, gardens and kitchen gardens. Secondly, it is affected by the cutting down of the trees in the upper reaches of the river. The Almatinka flows into another mountain river, the Keskelen, which in turn flows into the Ili river. The Almatinka owes its name to the fact that its source in the mountains is thickly overgrown with apple trees ('alma') and apricot trees (uryuk).

361 132 Vernyy is located at a height 2500 feet above sea level, and enjoys a warm and healthy climate. The summer heat rises to 30° centigrade in the shade. The inhabitants have remarked that the climate of the town is growing dryer every year. Formerly the winter cold was more bearable and the snow lasted only a few days. In more recent years the winters have begun to be Russian, about three months long. There is no doubt that here too the cutting down of the forests in the environs of the town has had a somewhat deleterious effect.

The summer heat spells are almost unbearable, but in the evenings and at night it is always cool because of the proximity

000 there, but not at Vernyy. Yet vineyards grow here with some success.

361 The environs of Vernyy, with the ex-
● 133 ception of the mountains, are level and depressingly monotonous.

On the other hand, the Alatau mountain range, which closes off the horizon of Vernyy on the south, is usually picturesque. The altitude of the range rises to 14,000 feet, and
[137] the crests are always covered with snow. In the recent past, not only the slopes but also the foothills were covered with dense forests. Now only grass grows in the foothills, a bright emerald green which harmonizes with the dark green of the spruce forest growing in the mountains themselves. All this is topped by a crown of white snow, etched against the bright blue sky. In the mountains it rains frequently, and when it does the mountains are overcast, as though enveloped in a shroud, with dark clouds, which grow whiter, as they rise higher, /420/ assume all sorts of whimsical contours, and gradually diminish and vanish into space.

The foothills are a particularly beautiful sight in the spring time (in April), when the nomads spread a pall over them, that is, they burn the old grass to make the new grass grow better. The skies are filled with a glowing fire, and it fills the whole surrounding countryside with waves of light. Yet no matter how beautiful the Alatau mountains are from the side, the views in the mountains themselves are still more wonderful, and more striking. The thick undergrowth of the valleys and ravines, streams bubbling with foam against

361 their steep banks, pathways and narrow roads,
133 the snakes winding over the precipices, all this makes an unforgettable impression. With every step the views change, as though in a kaleidoscope and appear more and more striking and more effective.

[137] In the Alatau mountains the spruce is the tree which grows in the greatest abundance. After it, but much less abundant, are the apple trees, the apricots, the 'dzhida', the ashtrees, the juniper and even the birch.

361 The town of Vernyy is divided into the following parts: the Almata station (the old part of the town), the Almata settlement, the Tatar suburb, and Novyy (New town), actually the town which has developed since the beginning of the 1870s.

The latter part consists to a considerable degree of stone, or, more precisely, brick buildings, while the old parts of the town are built up exclusively of spruce wood.

[363] Both the old and the new town have been planned regularly. The streets are straight, level and wide, in most cases planted (although quite sparsely) with trees. There are often small gardens near the houses.

361 The wooden houses of Vernyy, which look
342 like Russian huts with wooden roofs, are almost all cold, first of all because they are caulked up not with moss (1) but with hay, which /421/ partly rots, and is partly dragged apart by the birds, for which reason cracks are always forming in the walls.

8:Kostenko 147-C-4,5 (1868-80)1880 RL1 Turkestar
RL1

Kuldja

361 The town Kuldja discussed here is also
133 called "Old Kuldja" or "Taranchi Kuldja", as distinguished from "New Kuldja" or "Chinese Kuldja" which was destroyed in 1866, and was 35 versts southwest of the old town. Old Kuldja is situated in the broad valley of the river Ili, on its right bank, 3 versts from the river. Near Kuldja the Ili flows between wide banks, a broad and well-watered river. The right bank is steeper than the left both here and along the entire course of the river. Its width is about 136 feet. It is crossed by three ferryboats, maintained by a Russian businessman. It flows so swiftly, especially when there is a wind, so that the crossing is slow. The river freezes over 60 days a year, from the end of December to the end of February. Wood has long been floated down the Ili from the upper reaches to the middle course of the river.

[134] The soil in the environs of the town is
132 sandy loam and very fertile. The climate of Kuldja is warm, healthy and pleasant. Although
361 the summer heat here goes up to 41° centigrade in the shade, the heat is modified considerably by the summer rains. Because of the spring rains, grain takes root in the environs of Kuldja even without watering. The winters here are uniform, and the snow remains on the ground up to a month and a half. The cold in winter reaches 32° centigrade.

The Kuldja valley is protected by high mountains from all sides except the west, and apparently this fact goes far to explain the moderateness of the climate, which notwithstanding, permits the growing of delicate trees and

3: Czaplicka E-4 (no date) 1918 RL4 Turkic Peoples
Turkestan RL1

489 It has been said that this rich area has no communication with the world outside, and difficult communications within. It is true that the only sea-outlet is through the mouths of the Ob and the Yenisei; but with the recent re-opening of the Kara Sea route the northern river-ways have a great commercial value. This will especially be the case when, on the completion of the Ob–Arctic Ocean Railway, there will be no necessity to cross the Kara Sea with its dangerous straits.

Within this region the communication is carried on—

491 (*a*) By means of natural roads, of which there are some 109,000 versts in Siberia, and 58,000 versts in Russian Central Asia, not counting the secondary roads.

133 505 (*b*) By means of river-ways, in which especially Western Siberia is very well endowed. The basin of the River Ob alone is navigable for a distance of some 15,000 versts, while some 16,000 more is passable for floating. Turkestan, with its two chief rivers Syr-Daria and Amu-Daria, has much more limited river communications; Amu-Daria is navigable for a distance of some 1,400 versts, but for steam-ships only 800 versts. Syr-Daria could be made navigable for a distance of 1,200 versts, but at present the river is more important for irrigation purposes. The southern rivers are free from ice for about six months in the year, while the rivers north of the Altai Mountains are navigable from three to four months a year.

496 (*c*) The railway is, of course, the most important means of communication, and each new line causes a great industrial and social upheaval in the district. The Trans-Siberian has only a relative value, and much greater importance is attached to the southern line of the Trans-Siberian (Chelyabinsk–Omsk) and the new branches; the Altai (Novo-Nikolaevsk–Biisk–Semipalatinsk) and the Minusinsk (Achinsk–Minusinsk). The Central Asiatic (Krasnovodsk–Andijan), covering 2,368 versts, and the Tashkent Railway (Orenburg–Tashkent), covering some 1,756 versts, unite to some extent Russian Central Asia with Western Siberia. A line between Semipalatinsk and some point on the Tashkent Railway will be of enormous importance for the further development of Western Siberia,

23: Shabad N-4 (no date) 1951 Rl Soviet Union Rl
Soviet Central Asia RL2

CHAPTER 17

Central Asia

SU
131 SCA 131 SOVIET CENTRAL ASIA extends from the Caspian Sea in the west to the Chinese frontier in the east, from Kazakhstan in the north to the borders of Iran and Afghanistan in the south. This region, which has some of the most unusual features of the natural divisions of the USSR, has an area of about 475,000 square miles. It is located farthest south and most removed from the tempering influence of the oceans.

SU 133* SCA 133 The structure and relief of Central Asia can be divided into two parts: the northwestern section, comprising about two thirds of the total area, which includes extensive low, sandy deserts and irrigated oases in the foothills of the mountains, and the southeastern part, one third of the total area, a mountainous zone with some of the longest, highest, and most glaciated ranges of the world. The low region is part of the Turan lowland. It stretches from the Caspian Sea to the Syr Darya and the range Kara-Tau in the east and includes the southern portion of the Ust'-Urt plateau and the two largest deserts of Central Asia, the Kara-Kum and the Kyzyl-Kum, separated from each other by the Amu Darya. The Kara-Kum has the greater area, of which nine tenths are covered by sand. Here and there one encounters barren clay flats and salt-covered depressions. A number of dry river beds, similar to the *wadi* of the Sahara, run from the present river course toward the Caspian Sea. The largest of these dry valleys is the Uzboy, which is thought to have been a branch of the Amu Darya. Along the southern edge of the Kara-Kum, at the foot of the Kopet Dagh, are steppes and oases extending in a narrow belt along the USSR-Iran frontier. Other oases lie on the Tedzhen and Murgab rivers, as well as in the lower reaches of the Amu Darya (oasis of Khorezm). The Kyzyl-Kum lies somewhat higher than the Kara-Kum and has more rocky areas, devoid of sand cover. In its central section there are outcrops of Paleozoic rocks, rising to over 8,000 feet, which are the eroded and weathered remains of ancient mountain ranges. In the eastern part of the Kyzyl-Kum numerous steppe areas penetrate be-

23: Shabad N-4 (no date) 1951 Rl Soviet Union Rl
Soviet Central Asia RL 1

tween the outspurs of the mountainous section. Such a steppe is the Fergana Valley, one of the densest populated areas of Central Asia.

The Tien Shan mountain system forms the most extensive portion of the mountainous section of Central Asia. It is composed of a number of separate ranges, all directed generally east and west; many of them bear the local name *ala-tau* [mottled mountains], because of the typical isolated patches of perpetual snow. The northern and the central ranges of the Tien Shan form part of the Lower and Upper Paleozoic (Hercynian) folded systems. The individual crests are separated by wide mountain valleys, constituting rich agricultural and pasture lands. On the frontier of the USSR and China, in the easternmost section of the central Tien Shan, several ranges merge into a powerful glaciated mountain hub, where the Pobeda [victory] Peak rises to 24,400 feet, the highest point in the Tien Shan. South of the Tien Shan lies the younger (tertiary) Pamir-Alay mountain system, distinguished by more compact and higher ranges, which includes the highest mountain of the USSR, Stalin Peak (24,595 feet). Near by is the greatest glacier of the world, the Fedchenko Glacier, about 50 miles long. The southernmost crest of the Tien Shan, the Alay range, is separated by the Alay valley from the northernmost range of the Pamir-Alay system, the Trans-Alay range, which rises to 23,377 feet at Lenin Peak. South of the Pamir-Alay system lies the Pamir, "the roof of the world." This is a high mountain mass of a plateau character in the east, but having high ranges separated by deep, precipitous river gorges in the west. Lesser ranges are the Kopet Dagh on the frontier between the USSR and Iran, and the Balkhan ranges near the Caspian Sea.

The entire territory of Central Asia drains into inland sea basins; not one drop of water reaches the open oceans. Most of the waterways of this region drain into the two most important rivers of Central Asia, the Syr Darya and the Amu Darya; both flow into the Aral Sea. The larger and more important of the two, the Amu Darya, is fed by the snows and glaciers of the Pamir-Alay mountain system and the Pamir plateau. It is formed by the junction of the Panj and the Vakhsh rivers, the former a boundary stream between the USSR and Afghanistan, the latter an important irrigation source in its lower reaches. The Amu Darya rapidly loses its mountain torrent characteristics and, turning northwest into the desert region, widens its course, but still maintains a strong eroding action. It enters the Aral Sea through a wide delta. Unfortunately, it is not very suitable for irrigation, because of its great

23: Shabad N-4 (no date) 1951 Rl Soviet Union Rl
Soviet Central Asia Rl2

water volume, its speed, and the variability of its course. The other river, the Syr Darya, rises in the Tien Shan system. It is formed by the Naryn, which flows through wide valleys south and southwest of lake Issyk-Kul', and the lesser Kara Darya, which rises in the Fergana range. As opposed to the Amu Darya, it has a smaller volume, width, and depth, but it is longer and very suitable for irrigation. It flows through the Fergana Valley and then turns northwest through the desert zone toward the Aral Sea, which it enters also through a delta. Its most important affluent is the Chirchik which waters the oasis of Tashkent.

Among the mountain lakes the most notable is Issyk-Kul' which has an area of 2,395 square miles and lies 5,198 feet above sea level. It is slightly saline and does not freeze in the winter. Lesser lakes are the Kara-Kul' and the Zor-Kul', in the Pamir plateau.

Due to its remoteness from the oceans, the climate of Central Asia is very continental in nature. The continental characteristics already noted in Kazakhstan are still more accentuated in this region. The internal seas, the Caspian and the Aral, which border on Central Asia are too small to exert any tempering influence. Average summer temperatures in the lowland rise as high as 90° F, and in a great part of the region frosts of a few degrees below 0° F are possible in the winter. Evergreen vegetation, such as that along the Batumi coast of the Black Sea, does not exist in Central Asia. There is very little precipitation, generally 4 to 5 inches a year over a great part of the territory; only in the foothills does the rainfall amount to 16 inches or more. These climatic extremes are especially notable in such high mountain areas as the Pamir. In the valleys, such as the Fergana and the Zeravshan valleys, the climate is milder. Winter conditions are unsettled. Snow generally falls in December and remains on the ground till February, although it may melt earlier. The transition from the cold of February to the warmth of May is very sudden. Toward the end of that summer month wheat ripens and apricots are ready for picking. This period is followed by a long, hot, dry summer, in which predominantly dry winds blow from the north and wither the vegetation. These winds create sandstorms in the desert and sometimes raise a fine dust which blots out the sun. In the foothills and the mountains the summer is more temperate: there is precipitation, and the vegetation does not dry out. Toward the end of August or the beginning of September the heat lets up and is followed by a warm autumn, the best season in Central Asia. The climate of the Pamir and of the higher ranges of the Tien Shan reminds one of the Far North. Frosts